

Integration Using Partial Fractions

Partial Fraction Decomposition – used when you have a function divided by another function (if substitution won't work)

- ❖ Divide if the fraction is improper (degree of Numerator \geq degree of Denominator)
- ❖ Factor the denominator
- ❖ Decompose the fraction
- ❖ Integrate

• *Example 1:* $\int \frac{x+2}{x^2-4x} dx$

Example 2: $\int \frac{x^2+2}{x^2-4x} dx$

$$\text{Example 3: } \int_0^1 \frac{3}{2x^2+5x+2} dx$$

$$\text{Example 4: } \int \frac{5-x}{2x^2+x-1} dx$$